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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,578	01/20/2004	Kenji Uehara	91338	1053
24628	7590	08/09/2004	EXAMINER	
WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			NOVOSAD, CHRISTOPHER J	
			ART UNIT	PAPER NUMBER
			3671	

DATE MAILED: 08/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/760,578

Applicant(s)

UEHARA, KENJI

Examiner

Christopher J. Novosad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/22/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

Claims 1, 8 and 10 are objected to because of the following informalities:

In claim 1, second to last line; claim 8, line 9 and in claim 10, second to last line, --in-- should be inserted after "area" to correct a grammar error.

In claim 10, line 7, the recitation "inter" should be corrected to --inner-- to correct a grammar error.

In claims 1, 8 and 10, line 5, the recitation "being" should be deleted to correct a grammar error.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 8 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation "long" in claim 1, line 4; claim 8, line 4; claim 10, lines 4 and 5; claim 11, line 3; and in claim 12, line 2 is indefinite since "long" is a relative term and it is not clear as to exactly what is supposed to constitute "long".

The recitation "hard" in claims 1 and 8, line 6 (two occurrences); line 1 of claims 3-6; claim 8, line 12 (two occurrences); claim 9, line 2; and in claim 10, line 8 (two occurrences) since "hard" is a relative term and it is not clear as to exactly what is supposed to constitute "hard".

The recitation "close" in claim 12, line 2 is indefinite since "close" is a relative term and it is not clear as to what is supposed to constitute "close".

The recitation "the inner surface" in line 1 of claims 11 and 12 lacks proper antecedent basis.

In claim 2, line 2, the recitation "the lower end" lacks proper antecedent basis.

The last line of claim 12, specifically "is made wider as coming close" is indefinite since this recitation is awkward and therefore confusing.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Eversole *et al.*

With respect to claim 1, Sakamoto shows an aeration tine device 21,11 attached to a soil aerator (Fig. 4), comprising:

a tubular tine member 21 extending along an axial direction (unnumbered) thereof between a lower end portion (unnumbered) and an upper end portion (unnumbered) and having a lower opening (unnumbered) bored at a center of a lower end surface (unnumbered), and a long side ejection opening (unnumbered) in communication with the lower opening (unnumbered), the lower end surface (unnumbered) extending in a plane perpendicular to the axial direction (unnumbered); and

a tip 11 having a tapered distal end portion (unnumbered) formed with a tip opening (unnumbered) and a proximal end portion (unnumbered) formed with a proximal opening 11d bored at a center of a proximal end surface (unnumbered) in communication with the tip opening (unnumbered), the proximal end surface (unnumbered) extending in a plane perpendicular to the axial direction (unnumbered) and coupling in an area in contact with the lower end surface (unnumbered) of the tubular tine member 21.

With respect to claim 2, the proximal end surface (unnumbered) has an outer diameter (unnumbered) substantially equal to an outer diameter (unnumbered) of the lower end (unnumbered; adjacent 312 and 21 in Fig. 1) of the tubular tine member 21.

As to claim 3, the tip 11 has the tip opening (unnumbered) whose diameter is narrower than the diameter of the proximal opening 11d.

Regarding claim 4, the tip 11 has a frustum portion of a cone shape (unnumbered) located on a lower side (unnumbered) and a cylindrical portion (unnumbered) located on an upper side (unnumbered).

The claims distinguish over Sakamoto in requiring (1) the tip to be made of a hard metal material (as required in claim 1); (2) the tip and the tubular tine member to be connected with

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each other by brazing (as required in claim 5); and (3) the tip to be made of tungsten carbide, titanium carbide or cermet (as required in claim 6).

Eversole *et al.* show a tip 20 made from tungsten carbide (col. 2, lines 13 and 14) which is a hard metal material wherein the tip 20 is joined to the tine 30 by brazing (note col. 2, lines 18-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the tip 11 of Sakamoto out of tungsten carbide, a hard metal material, as disclosed in Eversole *et al.*, for improved strength.

It would also have been obvious to one of ordinary skill in the art at the time the invention was made to have joined the tip 11 and the tine member 21 of Sakamoto by brazing as disclosed in Eversole *et al.* for improved joint strength.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Eversole *et al.* as applied to claims 1-6 above, and further in view of Japanese reference '604.

Sakamoto shows the structure of the aeration tine device 21,11 as noted, including a tubular tine member 21.

Claim 7 distinguishes over Sakamoto in requiring the tubular tine member to be made of carbon steel, alloy steel, stainless steel, or any combination of those steels.

Japanese reference '604 disclose in the constitution a "cylinder 2 made of a steel material such as carbon steel". Note Figs. 1-6 showing the tubular tine member 2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the tubular tine member 21 of Sakamoto out of carbon steel as disclosed in Japanese reference '604 for greater strength.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Eversole *et al* and Wang *et al*.

With respect to claim 8, Sakamoto shows an aeration tine device 21,11 attached to a soil aerator (Fig. 4), comprising:

a tubular tine member 21 extending along an axial direction (unnumbered) thereof between a lower end portion (unnumbered) and an upper end portion (unnumbered) and having a lower opening (unnumbered) bored at a center of a lower end surface (unnumbered), and a long side ejection opening (unnumbered) in communication with the lower opening (unnumbered), the lower end surface (unnumbered) extending in a plane perpendicular to the axial direction (unnumbered); and

a tip 11 having a tapered distal end portion (unnumbered) formed with a tip opening (unnumbered) and a proximal end portion (unnumbered) formed with a proximal opening 11d bored at a center of a proximal end surface (unnumbered) in communication with the tip opening (unnumbered), the proximal end surface (unnumbered) extending in a plane perpendicular to the axial direction (unnumbered) and coupling in an area in contact with the lower end surface (unnumbered) of the tubular tine member 21.

The claims distinguish over Sakamoto in requiring (1) the tip to be made of a hard metal material (as required in claim 8); (2) a metal foil insertion to be placed between the lower end surface of the tubular tine member and the proximal end surface of the hard metal tip for connecting the tubular tine member with the hard metal tip by brazing (as required in claim 8) and (3) the metal foil insertion to be essentially made of copper, wherein the hard metal tip and the tubular tine member are connected by silver brazing (as required in claim 9).

With respect to (1), Eversole *et al.* show a tip 20 made from tungsten carbide (col. 2, lines 13 and 14) which is a hard metal material wherein the tip 20 is joined to the tine 30 by brazing (note col. 2, lines 18-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the tip 11 of Sakamoto out of tungsten carbide, a hard metal material, as disclosed in Eversole *et al.*, for improved strength.

With respect to (2) and (3), note claim 15 of Wang *et al.* that discloses using a brazing material utilizing metal foil for brazing between two metals. Note also the disclosure of silver in this brazing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a metal foil and silver as disclosed in Wang *et al.* in brazing the tip 11 to the tine member 21 of Sakamoto for increased strength.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Eversole *et al.* and Fridd or Santa Cruz *et al.*

With respect to claim 10, Sakamoto shows an aeration tine device 21,11 attached to a soil aerator (Fig. 4), comprising:

a tubular tine member 21 extending along an axial direction (unnumbered) thereof between a lower end portion (unnumbered) and an upper end portion (unnumbered) and having a lower opening (unnumbered) bored at a center of a lower end surface (unnumbered), and a long side ejection opening (unnumbered) in communication with the lower opening (unnumbered), the lower end surface (unnumbered) extending in a plane perpendicular to the axial direction (unnumbered); the long side ejection opening (unnumbered) having a back slope 31c1 formed in



a united body (unnumbered) with the tubular tine member 21 rising from an inner surface (unnumbered) of the tubular tine member 21; and

a tip 11 having a tapered distal end portion (unnumbered) formed with a tip opening (unnumbered) and a proximal end portion (unnumbered) formed with a proximal opening 11d bored at a center of a proximal end surface (unnumbered) in communication with the tip opening (unnumbered), the proximal end surface (unnumbered) extending in a plane perpendicular to the axial direction (unnumbered) and coupling in an area in contact with the lower end surface (unnumbered) of the tubular tine member 21.

With respect to claim 11, the inner surface (unnumbered) is extending in a cylindrical shape and the back slope 31c1 is rising from a portion of the inner surface (unnumbered) opposite to the long side ejection opening (unnumbered) with an angle of 20 to 40 degrees.

The claims distinguish over Sakamoto in requiring (1) the tip to be made of a hard metal material (as required in claim 10); and (2) the back slope to rise in a curving manner from an inner surface of the tubular tine member (as required in claim 10).

With respect to (1), Eversole *et al.* show a tip 20 made from tungsten carbide (col. 2, lines 13 and 14) which is a hard metal material wherein the tip 20 is joined to the tine 30 by brazing (note col. 2, lines 18-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the tip 11 of Sakamoto out of tungsten carbide, a hard metal material, as disclosed in Eversole *et al.*, for improved strength.

As to (2), Fridd shows a back slope (unnumbered; Figs. 1-3) rising in a curved manner from an inner surface (unnumbered) of a tubular tine member 12.

Also, as to (2), Santa Cruz *et al.* show a back slope (unnumbered adjacent 18) rising in a curved manner from an inner surface (unnumbered) of a tubular tine member 12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the back slope 31c1 of Sakamoto rise in a curved manner as shown in Fridd or Santa Cruz *et al.* from the inner surface (unnumbered) of the tubular tine member for easier earth penetration.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Eversole *et al.* and Fridd or Santa Cruz *et al.* as applied to claims 10 and 11 above, and further in view of Cozine *et al.*

Sakamoto shows the aeration tine device 21,11 as noted, including an inner surface (unnumbered) that extends in a cylindrical shape.

Claim 12 distinguishes over Sakamoto in requiring the inner surface to be made wider as it comes close to the long side ejection opening.

Cozine *et al.* show an inner surface (unnumbered; Fig. 3) that is made wider as it comes close to the long side ejection opening 35.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the inner surface (unnumbered) of Sakamoto wider as it comes close to the long side ejection opening (unnumbered) as shown in Cozine *et al.* for easier soil penetration.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rizzitano *et al.* disclose attachment of a rotating band to a shell casing by brazing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher J. Novosad whose telephone number is 703-308-2246. The examiner can normally be reached on Monday-Thursday 5:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Will can be reached at 703-308-3870. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher J. Novosad  
Primary Examiner  
Art Unit 3671

July 27, 2004